

1/7

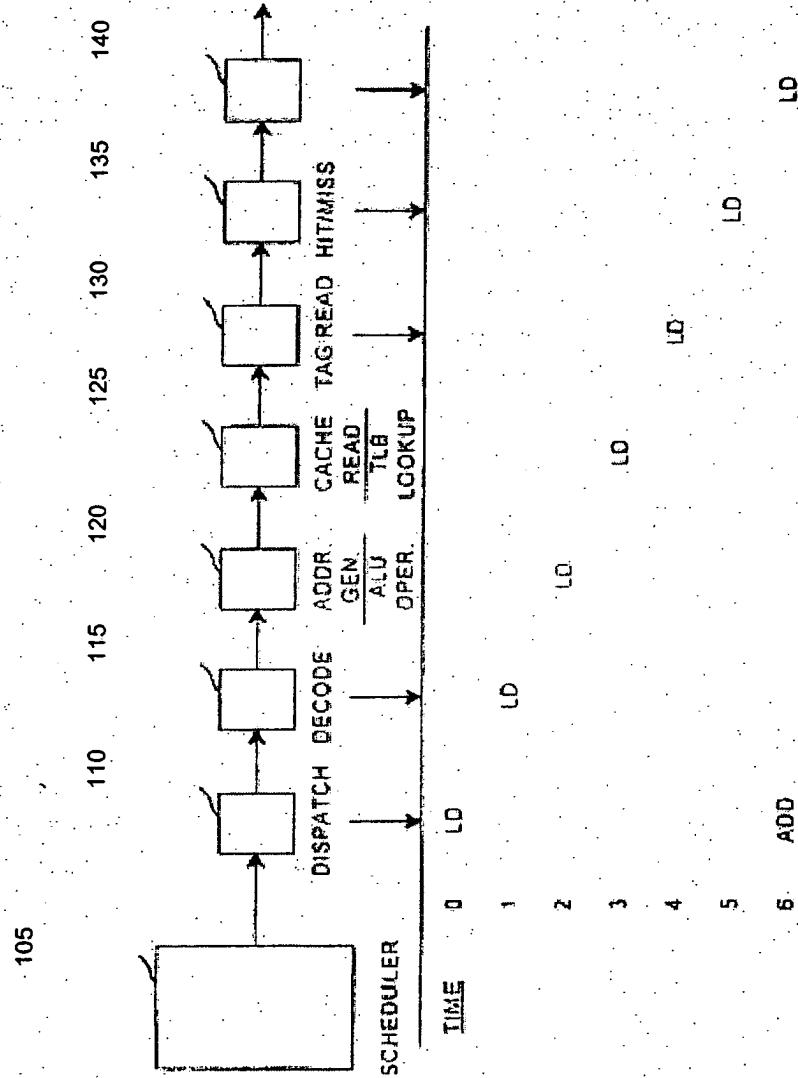


FIG. 1
PRIOR ART

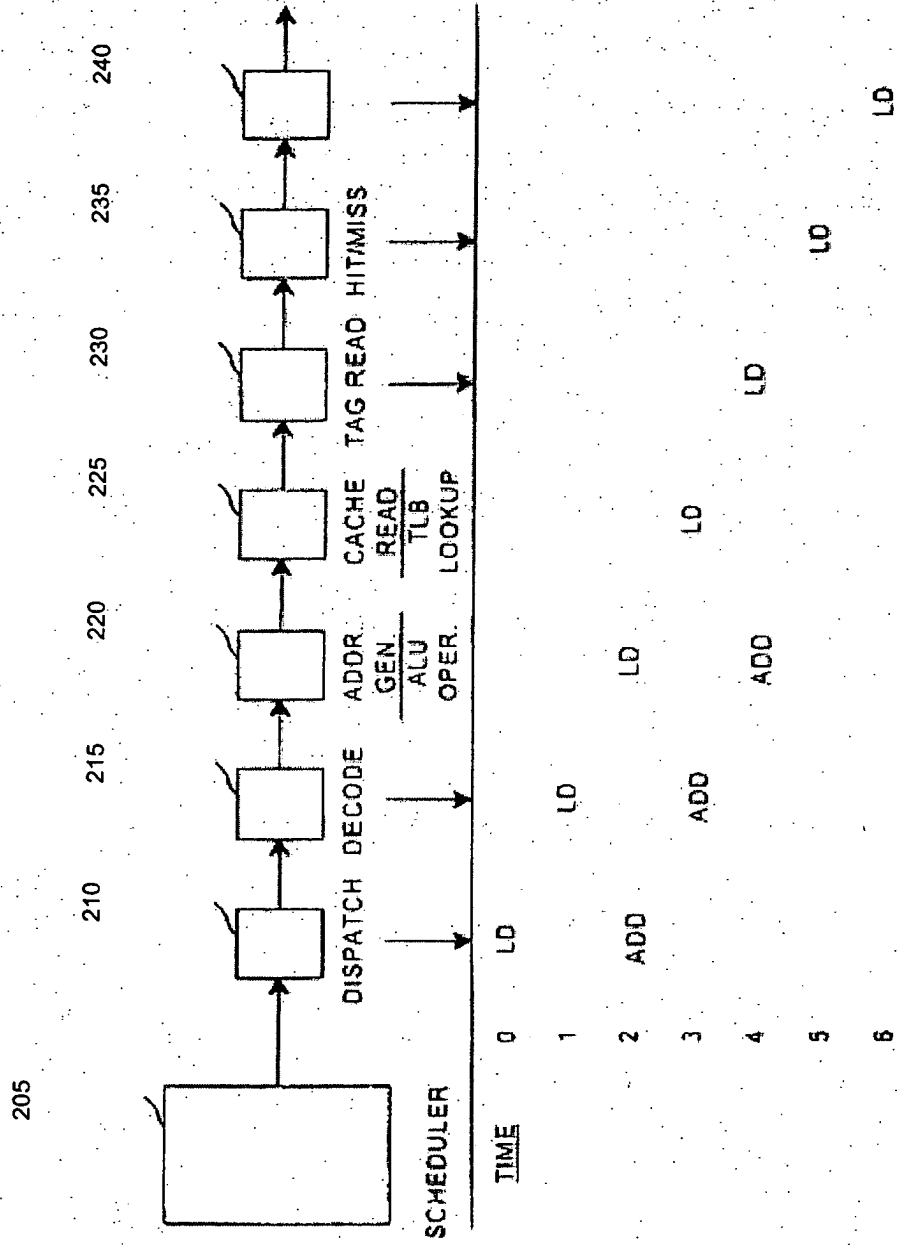


FIG.2

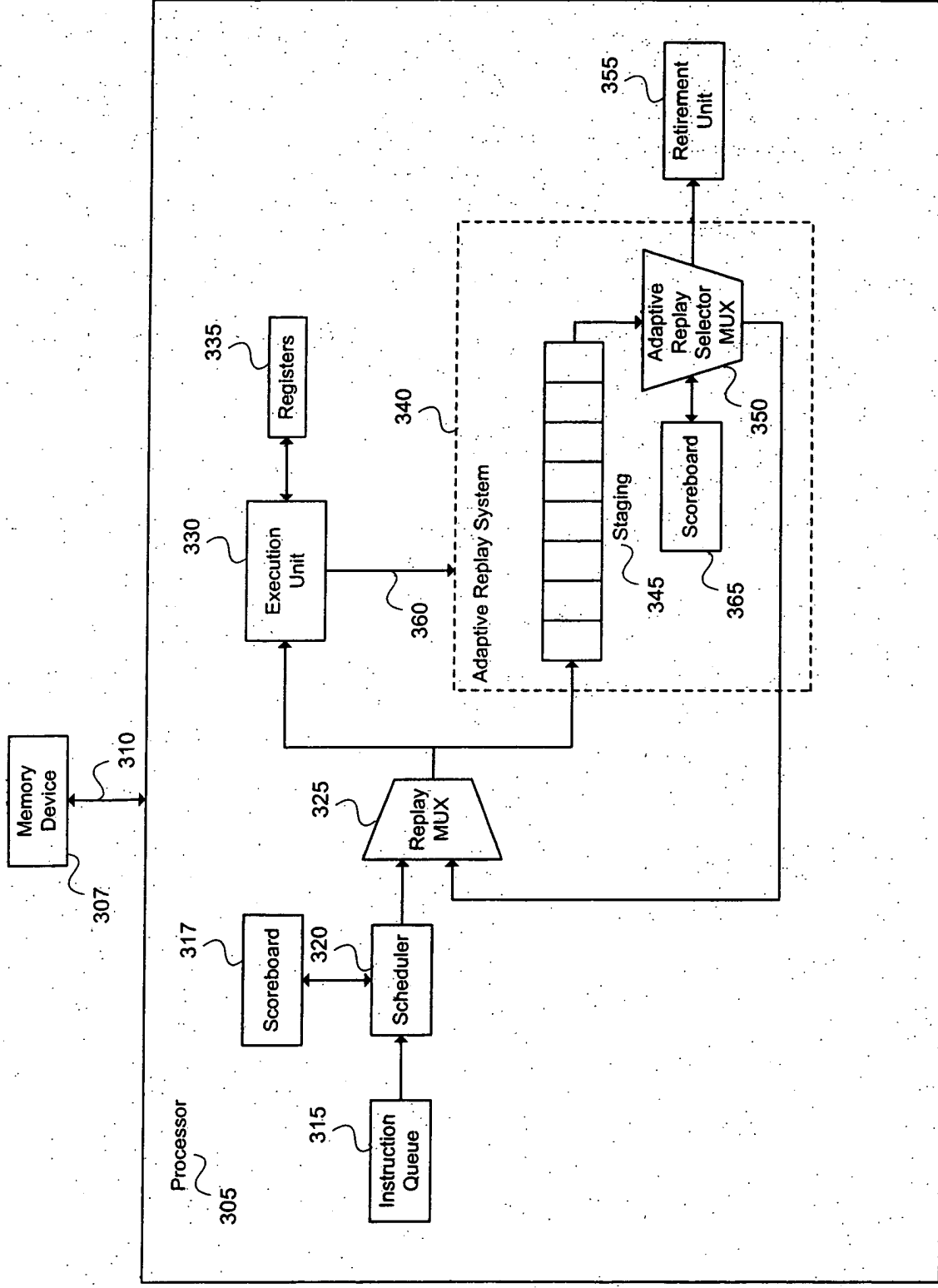


Fig. 3

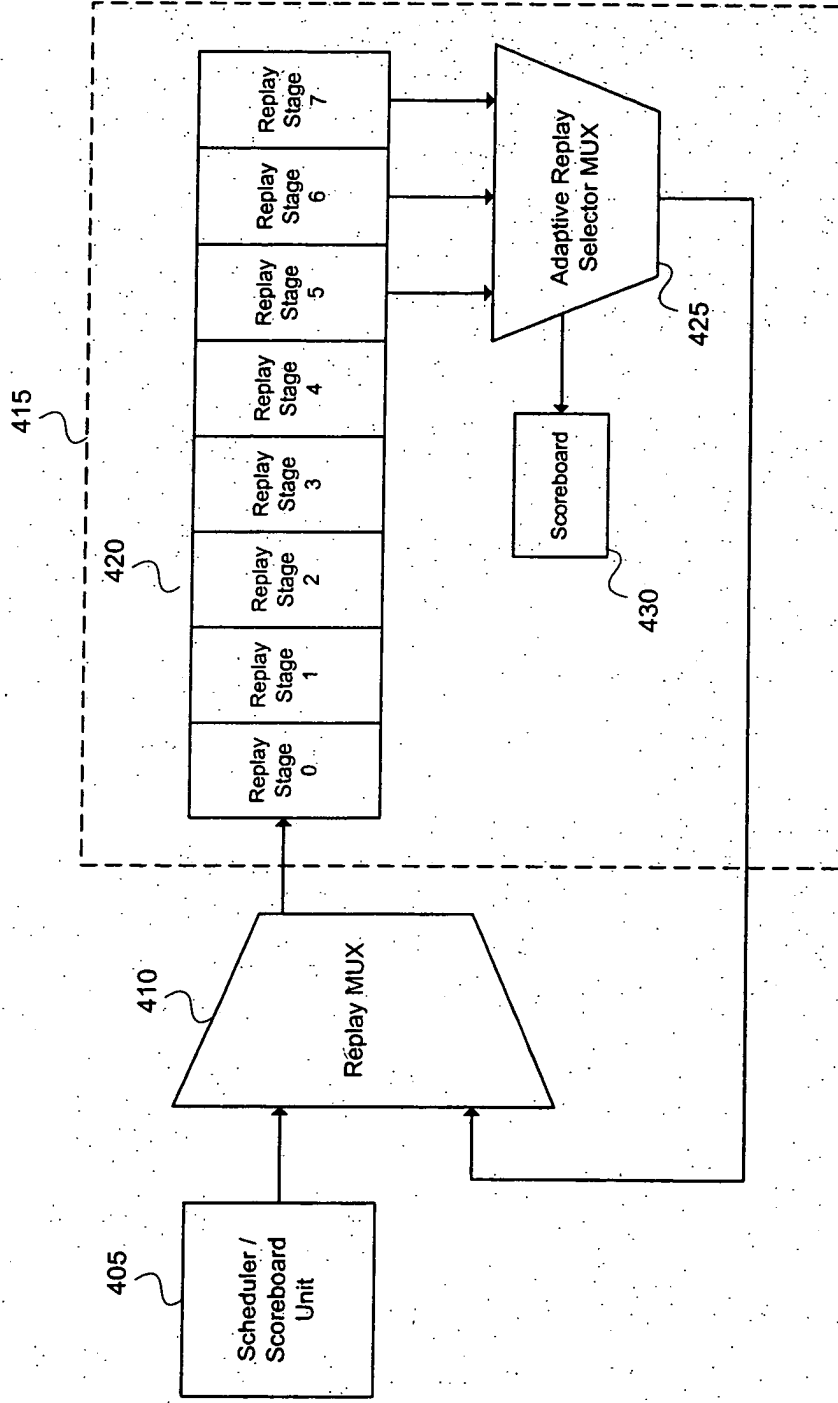


Fig. 4

Case 1: Uop late arrival

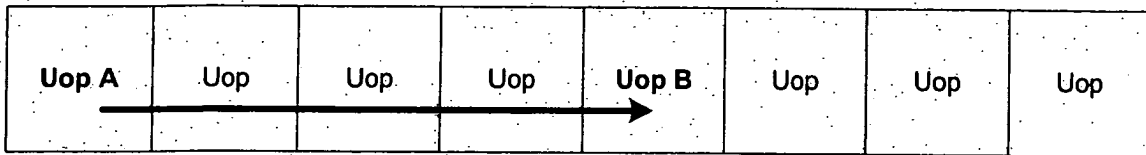


Fig. 5a

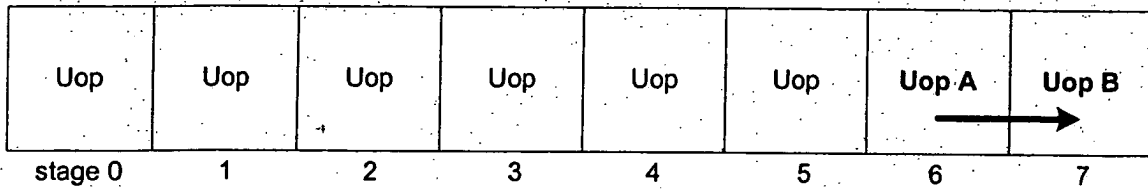


Fig. 5b

Case 2: Multiple active Uops

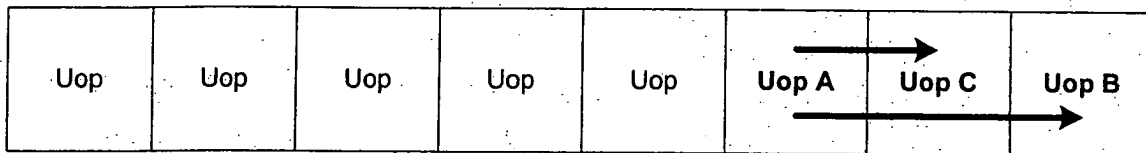


Fig. 6a

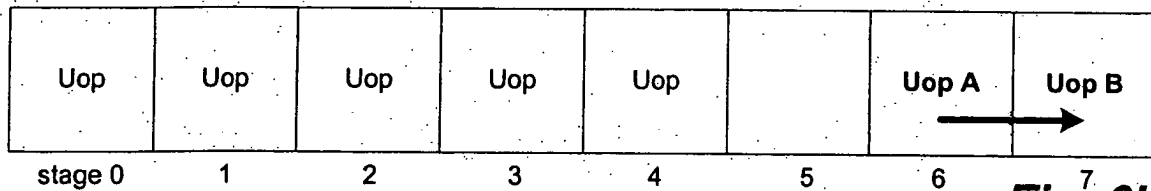


Fig. 6b

Case 3: Resource conflicts

Uop	Uop	Uop	Uop A	Uop	Uop	Uop	Uop
Uop	Uop	Uop	Uop B	Uop	Uop	Uop	Uop

Fig. 7a

Uop	Uop	Uop	Uop	Uop	Uop	Uop A	Uop
Uop	Uop	Uop	Uop	Uop	Uop B ←		Uop

Fig. 7b

Uop	Uop	Uop	Uop	Uop	Uop B	Uop A	Uop
stage 0	1	2	3	4	5	6	7

Fig. 7c

Case 4: Uop goes replay safe.

Uop	Uop	Uop A	Uop Z	Uop B	Uop	Uop	Uop
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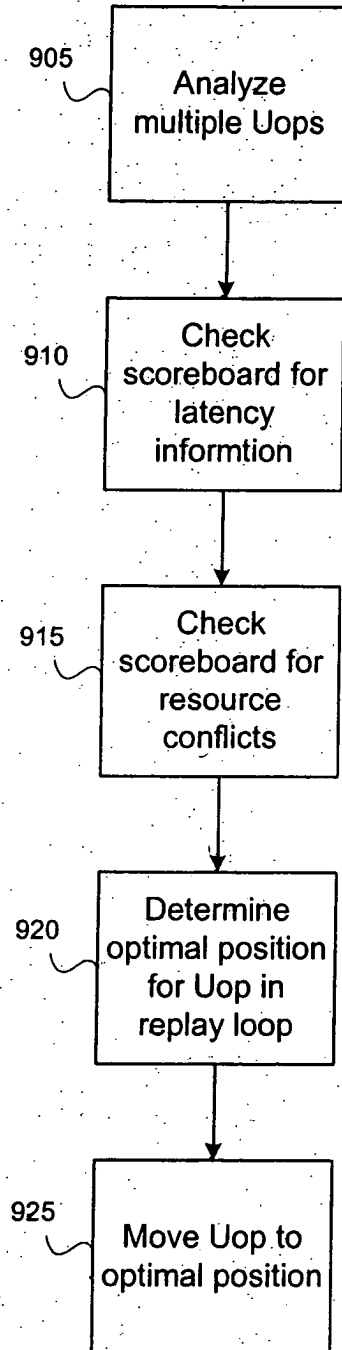
Fig. 8a

Uop	Uop	Uop	Uop	Uop	Uop A	hole	Uop B
					→		

Fig. 8b

Uop	Uop	Uop	Uop	Uop	Uop	Uop A	Uop B
stage 0	1	2	3	4	5	6	7

Fig. 8c

**Fig. 9**